KMCSF 7.3 V.1
07/16/08

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

July 16, 2008

Reply To: ECL-113

John Hatmaker LS1 629
Tronox LLC
P.O. Box 268859
Oklahoma City, Oklahoma 73126

Dear Mr. Hatmaker:

With this letter I am formally transmitting comments on the Draft Addendum 1 Work Plan for the Kerr-McGee Chemical Corporation Superfund Site Tronox Facility Soda Springs, Idaho (Work Plan). The enclosed comments reflect the review of the Environmental Protection Agency and the Idaho Department of Environmental Quality.

In addition to providing input on specific components of the draft Work Plan, our comments identify elements that are currently missing and will need to be added to the Work Plan. We also recommend that Tronox use recognized Long-Term Monitoring Optimization (LTMO) tools in evaluating the remedy and the monitoring network. While a full-blown optimization evaluation may not be appropriate that this point in time, LTMO tools would be useful in the evaluations described in the Work Plan.

Should you have any questions, please feel free to call me at (206) 553-8561.

Sincerely,

William M. Ryan
Remedial Project Manager

Enclosure

cc: Boyd Schvaneveldt, Tronox-Soda Springs
Clyde Cody, IDEQ-Boise
Doug Tanner, IDEQ-Pocatello

Comments on the
Draft Addendum 1 Work Plan
for the
Kerr-McGee Chemical Corporation Superfund Site
Tronox Facility Soda Springs, Idaho (Work Plan)

General Comments

Missing Fundamental Elements

In evaluating the ability of the currently implemented remedy to meet risk-based cleanup levels and the adequacy of the monitoring network to characterize off-site migration of site-related contaminants of concern (COCs), the Work Plan proposes to perform work that is highly reliant on data gathered and analyses conducted during the remedial investigation (RI). To the extent that this information will lead to a better understanding of the current situation, we agree with the proposed approach. We do note, however, that the Work Plan does not address some fundamental work elements that we believe are critical to improving our understanding of why groundwater concentrations have not met risk-based cleanup standards and why COC trends in groundwater have flattened. These elements are:

Assess the Conceptual Site Model (CSM) - The draft Work Plan appears to reflect the assumption that the CSM for groundwater and groundwater/surface water interaction developed during the RI is still valid. Given that groundwater modeling predictions based on that CSM have not proved to be accurate, the CSM needs to be reassessed and, if appropriate, revised to align with the current understanding of site-related conditions. This assessment should include information that has been developed since the RI was completed and should also gather and analyze information that may be needed to better understand or revise the CSM. An up-to-date CSM is key to understanding the relationship between site-related COCs and their off-site migration in groundwater. An updated CSM will also be needed to conduct a long-term optimization evaluation of the monitoring network. The Work Plan should be revised to include the approach to be undertaken to assess and, if appropriate, modify the CSM.

Develop Data Quality Objectives (DQOs) – DQOs need to be developed for the Work Plan to effectively evaluate the follow up actions identified in the second 5-year review. The follow-up actions identified in the second 5-year review are:

- Evaluate practicability of remedy in achieving cleanup goals;
- Evaluate adequacy of current groundwater monitoring network for identifying the offsite migration of COCs;
- Assess whether current groundwater and surface water performance standards are still applicable; and
- Work with the laboratory providing analytical services to reduce the groundwater detection and reporting limits to less than the MCL for arsenic.

When preparing the DQOs, special attention should be paid to the second follow-up action listed above. The current groundwater network was installed during the RI, with locations being selected to monitor specific sources or source areas. The use of the data from the monitoring network has changed since the RI, with the current focus on assessing trends in site-related COCs and evaluating the effectiveness of the remedy. To effectively evaluate and optimize the effectiveness of monitoring efforts in meeting current and future needs, DQOs reflecting current and projected uses of monitoring data need to be developed.

In addition, DQOs should be defined for other information/data gathering efforts related to evaluation of the remedy. Several pertinent remedy review activities are discussed below, including long-term optimization evaluation of the monitoring network, characterization of vadose zone data gaps, evaluation of institutional controls, and evaluation of existing models

The Work Plan should outline the approach taken to develop DQOs for current and future use of monitoring or other data to be collected as part of the remedy evaluation. EPA guidance for preparing DQOs can be found in *Data Quality Objectives Process for Hazardous Waste Site Investigations EPA QA/G-4HW Final. EPA/600/R-00/007* (January 2000) and *Guidance for the Data Quality Objectives Process EPA QA/G-4, EPA/600/R-96/055* (August 2000).

Long-Term Monitoring Optimization (LTMO) Tools

The discussion in Section 3.2 of the draft Work Plan provides very little information about the methodology that would be employed to evaluate the adequacy of the monitoring network in characterizing migration of COCs off-site. While the Work Plan does identify a variety of elements that will be considered in the assessment, the framework for evaluating them is not presented. Consequently, we are unable to determine how conclusions and recommendations related to the monitoring network will ultimately be determined. We strongly encourage the use of recognized LTMO techniques in assessing the monitoring network at the site as they provide structured, systematic approaches for evaluating the network. In addition to helping to optimize the design and operation of the groundwater monitoring network, recognized LTMO approaches contain components that will also assist in the evaluation of the remedy. For example, the Mann-Kendall trend analysis (which is part of the Monitoring and Remediation Optimization System (MAROS)) is a useful tool in assessing both long term and short term trends of COCs in monitoring wells. LTMO approaches may also prove helpful in refining the CSM (if necessary) and help clarify or refine the objectives of the monitoring program (see comments above). *Roadmap to Long-Term Monitoring Optimization, EPA 542-R-05-003, May 2005* (enclosed) provides an overview for conducting LTMO evaluations and identifies information and resources available for conducting the evaluations.

While the *Roadmap* indicates that both qualitative and quantitative methods can be used in an LTMO evaluation, we recommend using a quantitative method because it would

eliminate the more subjective nature of a qualitative evaluation and would be better suited to assessing the spatial and temporal aspects of the monitoring network. There are a number of LTMO evaluation tools available and described in the *Roadmap*, some of which are in the public domain and some of which are proprietary in nature.

Need to Characterize the Vadose Zone

The draft Work Plan states that conditions in the vadose zone beneath the former S-X and Scrubber pond basins are relatively unknown, yet the Work Plan does not provide an approach for addressing this data gap. Given that this may represent a potential source area contributing to observed levels of COCs in groundwater, the Work Plan should be revised to identify the approach to be used to characterize the vadose zone beneath these ponds (and any other areas of the site where COCs in the vadose zone may be impacting groundwater).

Institutional Controls

Section 2.3.5 of the draft Work Plan states that institutional controls (ICs) will not be evaluated because they "have been in place since 1995 and nothing has changed to indicate that these controls require modification." Institutional controls are identified as a component of the remedy and should be assessed as part of the remedy evaluation. Specifically, we understand that the City of Soda Springs does not currently have an ordinance, permitting requirement or other written, enforceable mechanism to restrict the development of drinking water wells within the City limits, which is contrary to what is reported in the draft Work Plan and the Five Year Review. Additionally, Tronox and Monsanto have joint responsibility for ensuring that appropriate ICs are in place for the "Lewis" property. These issues need to be addressed in the evaluation of the remedy. Ultimately, we need to ensure that all appropriate ICs are in place to protect against exposures to COCs until they are below the risk-based concentrations identified in the Record of Decision (ROD). The Work Plan should be revised to describe the approach that will be used to evaluate ICs. A logical starting point for this assessment would be to review the implementation plan for required institutional controls, which was to be developed as part of the Remedial Design as specified in Section 4.2.1 of the Statement of Work for Remedial Design/Remedial Action Kerr-McGee Superfund Site (September 25, 1996).

Empirical Date versus Modeling

While the groundwater model proved to be a useful tool in conducting a comparative analysis of remedial action alternatives in the feasibility study (FS), we see revisiting the modeling for purposes of the remedy evaluation to be of lesser importance than the analysis and gathering of empirical information related to site conditions. We see greater value in assessing the remedy components and groundwater monitoring data and gathering information which will provide a better understanding of the relationship between site-related COCs and their associated levels in groundwater. Some of this information may translate directly into parameters that have been/would be used in the model, however some may not. We want to ensure that the remedy evaluation maintains a focus on evaluating and gathering information that will ultimately explain the currently observed trends of COCs in groundwater and identify actions that may be necessary to

address them. Acknowledging that a better understanding of the modeling conducted for the RI relative to currently available and understood information may assist in this effort, the Work Plan should include a more detailed description of how the assessment of the model (as described in Section 2.5 of the Work Plan) fits in with the other components of the evaluation.

Revise to be a More Stand-Alone Document
The Work Plan should be revised to be more of a stand-alone document. In several places, the document includes unreferenced conclusions or broad generalizations that are difficult for readers to substantiate with this document alone. All broad statements that might leave the reader asking the question "what is the basis for that statement" must include sufficient information, such as document references or descriptive explanatory text, to support the statement. Several examples of this situation are presented below in the "Specific Comments" section. Note that the examples cited below are not all-inclusive and the document should be thoroughly reviewed and updated accordingly.

Specific Comments

Page 2, Section 1.2, bullets. An important outcome of the remedy evaluation will be to identify critical data gaps, either in the RI/FS, RD/RA, or in subsequent semi-annual monitoring, that may require additional action before a protectiveness determination can be made for the site. An example of a potentially significant data gap is the lack of characterization data for potential COC mass loading in the vadose zone beneath the former ponds; the lack of adequate vadose zone characterization was noted several times within the draft Work Plan. Add a bullet stating that potentially significant data gaps in the RI/FS, RD/RA, or long-term groundwater monitoring that are pertinent to the effectiveness of the existing remedy will be identified as part of the evaluation.

Page 2, Section 1.2, last paragraph. Add text stating that the remedy review report will include recommendations for future actions to address the identified significant data gaps.

Section 1.3.3. This section includes many of the components of a hydrogeologic conceptual site model (CSM) for the site. Provide appropriate figures illustrating the hydrogeologic CSM for the site to support the text. Identify where the CSM may vary from the CSM presented in the RI.

Page 5, 1st paragraph, last sentence. Tronox states:

> "No wells at the Tronox site were completed within this formation [Salt Lake formation]."

Provide an explanation and appropriate references related to the significance of the Salt Lake formation and why wells were not installed in the Salt Lake formation.

Page 6, 1st bullet. The Work Plan states:

"Magnitudes of hydraulic conductivities of the basalt flows and interflow zones at the Tronox site are relatively similar based on the results of extensive aquifer testing, whereas basalts and interflow units at the Monsanto site are indicated to differ substantially."

Describe how the hydraulic conductivities of the Tronox and Monsanto sites differ. Describe the technical basis for the differences.

Page 6, 3rd bullet. Tronox states:

"Faults are considered to represent zones of increased transmissivity at the Tronox site, whereas they are interpreted to be barriers to flow at the Monsanto site."

Describe the technical basis for the two differing opinions on the nature of local faults and indicate whether any long-term aquifer testing has been conducted to shed light on this issue.

Page 7, Section 1.3.3.2. For the discussion on this page (including the bulleted items), please include references to specific wells and/or references where this information can be found. **DEQ**

Page 7, last bullet and page 8, 1st paragraph. The hydraulic conductivity, gradient, and velocity data are important to the project. To assist the reader in their understanding of the hydraulic properties across the site, include a table summarizing the hydraulic conductivity, gradient, and velocities for the west and east portions of the site, to go along with the text.

Page 9, 2nd last paragraph. Revise this sentence to indicate that EPA will conduct five year reviews into the future consistent with the requirements of CERCLA, the National Contingency Plan and Agency Policy and Guidance per *Comprehensive Five-Year Review Guidance, EPA-540-R-01-007, June 2001.*

Page 9, 2nd last paragraph. Is "US EPA, September 1995" intended to refer to the ROD? If so, include in the References section of the Work Plan. See comment above regarding appropriate referencing of the conduct of Five-Year Reviews, as the ROD may not be the best reference here.

Page 12, 1st paragraph. Replace "meteoric" with some other term. We assume this usage is intended to convey large quantities (or something similar), but do not believe it is the correct word for this context.

Page 12, Section 2.1, last paragraph of section. It is not clear what the "off-site ground water impacts" are that have been identified. Please expand on this discussion and identify these impacts and how they relate to the facility or the discussion of molybdenum, or vanadium concentrations on or off-site the TRONOX facility.

Page 12, Section 2.2.1. The selected remedy for the S-X, Scrubber, Calcine, and MAP Ponds included elimination of uncontrolled liquid discharges followed by surface grading. the Work Plan states in various sections that potential COC mass loading exists in vadose zone soils beneath these former ponds. The Work Plan also acknowledges that potential vadose zone sources were not characterized during the RI. Tronox appears to recognize that COCs in the vadose zone may be an ongoing, active source to groundwater and that the selected remedy did not address this potential source(s). Describe and reference any background information describing why the remedy for the four ponds was limited to elimination of uncontrolled liquid discharges and surface grading and why residual contamination in vadose zone soils was not considered to be a potentially significant source to groundwater during the remedy selection process. Include a description of considerations, if any, which lead to not constructing low permeable caps at the four ponds to prevent infiltration.

Page 13, Section 2.2.2, 1st paragraph. Define "calcine horizon," what lies directly beneath it, and its relationship to native soils.

Page 13, Section 2.2.2, 3rd, paragraph. Describe what measures are being taken to assess if the On-Site Landfill liner is intact and working as designed. Describe the final disposition of leachate collected into the concrete impoundment for the On-Site Landfill.

Page 14, Section 2.2.4. Revise or delete the sentence "(t)he City of Soda Springs currently implements restrictions on ground water development and use." Based on conversations with the City of Soda Springs, EPA understands that the City does not currently have an ordinance, permitting requirement or other written, enforceable mechanism to restrict the development of drinking water wells within the City limits.

Page 14, Section 2.3. Include data quality objectives (DQO) within the Remedy Evaluation section of the Work Plan. Use of strategic planning through the DQO process will assure that the type, quantity, and quality of environmental data used to evaluate the remedy will result in environmental decisions that are technically and scientifically sound and legally defensible.

Page 15, 1st paragraph. Describe soil type and the source of the cover materials used to cap the S-X, Scrubber, Calcine, and MAP Ponds.

Page 15, 2nd paragraph. This discussion should be expanded to describe how the proposed analyses will differ from how information is currently analyzed and presented in the annual monitoring reports.

Page 15, Section 2.3.1, second paragraph.
Since the evaluation and performance of LSE relative to ground water impacts has been on-going for some time now, the word "continued" should be inserted before "...effects and performance of the LSE..." in the first sentence.

Page 15, 3rd paragraph. Delete the clause "Assessment off the assumptions used for the continued contribution from solid sources," from the first sentence of this paragraph.

Page 16, Section 2.3.1, last paragraph. A systematic approach to assessing the conditions of the covers seems appropriate. Provide additional descriptions of how the areas between the grid-lines will be assessed/observed while walking along each of the grid-lines. For example, clarify if you only intend to systematically look for any sign of damage to the cover from the vantage of each grid-point or otherwise. Provide a description how field personnel will address or compensate for vegetation that might interfere with observation of potential features away from the grid-lines. For future reference, the locations of all grid points and features of interest observed during the survey should be recorded using a hand held field GPS unit.

Page 16, Section 2.3.2, 1st paragraph. Construction records should be reviewed to verify that the landfill was constructed as designed.

Page 16, Section 2.3.2, 2nd paragraph. Revise the On-Site Landfill Evaluation portion of the Work Plan to include a field inspection of the landfill cover to ensure that the cover is properly maintained, functional, and has not been compromised.

Page 16, last paragraph, last sentence. For the concrete impoundment of the On-Site Landfill, the Work Plan states "Records indicate that pumping rates have decreased over time." A worst case scenario would suggest a failed liner. List potential causes of the decrease in leachate. Include in the Work Plan the actions that will be taken to assess the cause and significance of the decrease in leachate at the concrete impoundment.

Page 17, Section 2.3.3, 1st paragraph. Construction records should be reviewed to verify that the landfill was constructed as designed.

Page 17, Section 2.3.3, 2nd paragraph. Similar to the earlier comment for assessing the conditions of the covers of the former ponds, provide additional description of how the areas between the grid-lines will be assessed/observed while walking along each of the grid-lines at the Calcine Cap.

Page 18, Section 2.3.4. While the groundwater model proved to be a useful tool in conducting a comparative analysis of remedial action alternatives in the FS, we see revisiting the modeling for purposes of the remedy evaluation to be of lesser importance than the analysis and gathering of empirical information related to site conditions. We see greater value in assessing the remedy components and groundwater monitoring data and gathering information which will provide a better understanding of the relationship between site-related COCs and their associated levels in groundwater. Some of this information may translate directly into parameters that have been/would be used in the model, however some may not. We want to ensure that the remedy evaluation maintains a focus on evaluating and gathering information that will ultimately explain the currently observed trends of COCs in groundwater and identify actions that may be necessary to address them. Acknowledging that a better understanding of the modeling conducted for

the RI, relative to currently available and understood information, may also assist in understanding remedy performance, the Work Plan should include a more detailed description of how the assessment of the model fits in with the other components of the evaluation. Specifically, the Work Plan should explain how the sensitivity review of the model will be used to explain inconsistencies between the model results in the RI and ongoing contaminant and hydrogeologic trends. In describing this work, the Work Plan should also include a description of the actions that will be taken if the existing model proves inadequate in explaining the noted inconsistencies. To assist the reader, the Work Plan should also provide a description of the existing model and a general summary of the model results from the RI.

Page 19, Section 2.3.5. See comments regarding Institutional Controls under General Comments above.

Page 19, Section 2.4, 1st paragraph. Include all potential significant factors that may be influencing COC concentrations in groundwater in this discussion. For example, other significant factors missing from the current list include, but are not limited to: unknown levels of residual COC concentrations the in vadose zone, the absence of low permeable covers over the former ponds, a failure in the landfill liner, and the influence of groundwater pumping at the Monsanto site.

Page 19, Section 2.4, 3rd paragraph. The Work Plan states that trends will be analyzed using regression analysis for evaluating factors influencing COC concentrations in groundwater and surface water. In the absence of specific detail in the Work Plan, it is assumed that the proposed regression analysis will be similar to the regression analysis provided in the GTE monitoring report *2007 Annual Comprehensive Report Of Ground And Surface Water Quality Tronox Soda Springs, Idaho Facility*, dated October 18, 2007 (Annual Report). The approach used in the Annual Report is complicated by the inclusion of all data points after t=0 in the regression model. While including all data offers the best fit across the entire data range, it does (for many cases based on visual inspection of the plots in Appendix B of the Annual Report) result in a poor fit of the primary area of interest, that being the more recent concentrations. Since the trend lines are being calculated for the purpose of extrapolation beyond the range of available data (looking into the future), this is a concerning issue. Just one example is the vanadium trend line for KM-13, where the more recent data appears to be meeting a more constant level, but the trend line continues to dive based largely on the large decrease seen in very early data.

While the approach used to provide an approximate year that concentrations will fall below the RBC appears to have been performed objectively and consistently in the Annual Report, the poor fit provided by the calculated models for some recent data suggests a substantial lack of precision in these estimates. This is not discussed qualitatively or quantitatively in the Annual Report and must be addressed in both the Work Plan and the remedy review reports. Alternative regression approaches (e.g. not enforcing a set y intercept of t=0 or not including all data, particularly early data, in the calculations) should be included in the regression analysis. Inclusion of a regression equation table (a table of the coefficients, etc.) would be helpful to the reader in reviewing the approach.

In addition to the regression analysis, a Mann-Kendall test should be performed at a pre-specified level of confidence to document that a statistical trend does or does not exist. Although the plots provided in the Annual Report seem to make those trends pretty clear, a Mann-Kendall analysis is a simple documentation method, for the record, that a trend is or is not significant. Similar to the previous comment on alternative regression approaches (e.g. not enforcing a set y intercept of t=0 or not including all data, particularly early data, in the calculations) the Mann-Kendall trend analysis should address both long term and short term trends in order to better assess the status of the remedy. Note that the Mann-Kendal analysis is not appropriate for extrapolating to the future.

Page 19, Section 2.4. To help assess potential site-specific factors that may be influencing COC concentrations in groundwater and surface water at the Tronox site, the Work Plan should be revised to include additional field parameters and COC analytes as follows:

a. Beginning in fall 2008, the Tronox groundwater long-term monitoring (LTM) field parameter list should be expanded to include dissolved oxygen (DO) and oxygen-reduction potential (ORP) in addition to the existing field parameter list (pH, temp, specific conductance, and turbidity) to better understand redox conditions and its potential impact on the fate and transport of pertinent COCs at the site, such as vanadium and molybdenum. Field parameters should be collected with a flow-through cell calibrated with current calibration solutions.

b. In fall 2008, groundwater should also be sampled for dissolved iron, dissolved manganese, ammonia, total organic carbon (TOC), and silica in addition to the existing analyte list. Similar to the field DO and ORP measurements, the purpose of the dissolved iron, dissolved manganese, ammonia, and TOC samples is to increase our understanding of redox conditions at the site and its potential impact on the fate and transport of pertinent COCs. The purpose of the silica sample is to supplement the field turbidity measurements to evaluate potential colloidal breakthrough; that is, to evaluate how COCs adsorped to colloidal silica might be impacting the analytical results. The need to incorporate some or all of these additional analytes into subsequent post-2008 LTM Work Plans for the Tronox site will be based on the findings of the fall 2008 sample.

Page 20, Section 2.4, last paragraph. To assess the impact of rising water levels on groundwater quality, the Work Plan should include a proposed method to perform mass balance calculations to evaluate the impact of COCs absorbed in the vadose zone matrix. For example, mass balance calculations can be used to assess whether or not recent COC increases could come from desorption caused by rising groundwater levels. Alternately, mass balance calculations can be used to assess how groundwater concentrations could increase with leaching of adsorbed vadose zone COCs from ponding or precipitation. The mass balance calculations must be based on recognized COC soil-water partition coefficient (Kd) literature values for basalt or soils, as applicable to the well(s) in question.

Page 20, Section 2.5, 2nd paragraph. As previously noted, the absence of COC concentration data for the vadose zone beneath the former ponds may be a significant data gap with respect to the effectiveness of the remedy. Provide background information explaining the decision to not investigate vadose zone COC concentrations beneath the S-X and Scrubber ponds during the RI.

Pages 20-21, Section 2.5, first paragraph. This section should include more specificity in the discussion, and illustrates points made in the General Comment about the need to evaluate the vadose zone.

First, in the second sentence in the first paragraph, please list the wells instead of stating that the "a flattening of COC concentrations were identified in the data for a *number of wells*".

Second, the flattening of these COC concentration trends (such as molybdenum and vanadium), rather than being indicative of high concentration of these COCs that have "remained in the ground water for periods longer than predicted by the ground water model," may instead be indicative of as yet undiscovered and on-going sources such as in the vadose zone. These possibilities need to be investigated and the discussion here needs to provide more specificity than to state that potentially uncontrolled sources contributing to groundwater will be further evaluated as part of the remedy evaluation. The approach(es) to be used to evaluate the vadose zone should be incorporated into the Work Plan.

Page 21, Section 2.5.1, first and second paragraph.
The discussion in this section again illustrates that there may be vadose zone conditions that require additional investigation. More importantly, there is no plan presented for gathering information to better understand the nature and condition of these soils (vadose zone). The cover inspection (second paragraph) will be valuable in that it may identify swales or settled areas where snowmelt or heavy precipitation may collect and thus facilitate percolation, but these types of surveys will not identify subsurface contamination that may serve as a source.

Page 22, Section 2.5.2, 1st paragraph. Provide more specific information for the construction of the Western Calcine Impoundment cover. For example, describe the type of soil, such as native or low permeable, its thickness, amount of compaction, etc. The Western Impoundment is described as covering "approximately 13 to 17 acres." There appears to be considerable uncertainty for the area of the Western Impoundment. Explain the source of the uncertainty and describe the action that will be taken to more precisely define the area of the Western Impoundment area.

Page 22, Section 2.5.2, last paragraph. Similar to the previous comment on modeling (see comment on Page 18, Section 2.3.4.), the groundwater model assessment of the West Side Calcine Impoundment may be highly significant to the remedy review. The Work Plan should include a more detailed description of how the assessment of the model as it

relates to the West Side Calcine Impoundment fits in with the other components of the evaluation. Provide a description of the model and a general summary of the model results in the Work Plan. The Work Plan should also include a description of the actions that will be taken if the existing model proves inadequate to evaluate the Western Impoundment as a source to groundwater.

Page 23, Section 2.5.3, 1st paragraph, last sentence. Provide a description of how data will be evaluated to determine if construction of the Calcine cap could have affected the groundwater flow direction.

Page 23, Section 2.5.4, 2nd paragraph. In reference to the Limestone Settling Ponds, Tronox states "...however, the lined ponds did not appear to have had a significant impact to underlying soils or underlying calcine following liner removal." Provide further explanation of and the basis for this conclusion. For example, since subsurface samples were not collected, was this determination made wholly on the basis of a visual observation or other information source?

Page 24, Section 2.5.4, last paragraph. Similar to the earlier comments for assessing the conditions of the covers of the former ponds, provide a description of how the areas between the grid-lines will be assessed/observed while walking along each of the grid-lines at the cover of the Limestone Settling ponds.

Page 24, Section 2.5.5, last paragraph. Similar to the earlier comments for assessing the conditions of the covers of the former ponds, provide a description of how the areas between the grid-lines will be assessed/observed while walking along each of the grid-lines at the cover of the former vanadium plant.

Page 25, Section 2.6, 1st paragraph. Regarding regression and trend analysis, see previous comment for page 19, Section 2.4, 3rd paragraph.

Page 25, Section 2.6, 3rd paragraph. Provide a general description of the scope and potential importance of the Evergreen and Monsanto investigations to the Tronox investigation and remedy review. We recommend the use of current data, where available. EPA will assist Tronox in acquiring current data collected by Monsanto, if Tronox is unsuccessful in acquiring it directly from Monsanto.

Page 26, Section 2.7. Delete the clause "contrary to statements made in Addendum 1 to the SOW" from the second sentence of this section.

Page 26, Section 2.8. Expand the Current Remedy Evaluation Report to include the following assessments: identification of data gaps pertinent to the effectiveness of the remedy, updated CSMs based on a combination of RI and post-RI data, and a discussion of the validity and applicability of existing models.

Page 27, Section 3.1, 3rd paragraph. Given that KM-5 remains elevated in vanadium, background wells KM-1 and KM-10 should be sampled for the COCs during the remedy review to confirm that the source of vanadium is not from the reclaimed 5-Acre Ponds.

Pages 29-30, Section 3.2. Include in the remedy evaluation a systematic review of the monitoring network and its effectiveness in terms of long term monitoring optimization. As stated previously in the General Comments, we recommend the use of recognized LTMO tools to evaluate the monitoring network. Include the results of the evaluation in the Remedy Evaluation Report.